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Multiplying whole numbers and fractions

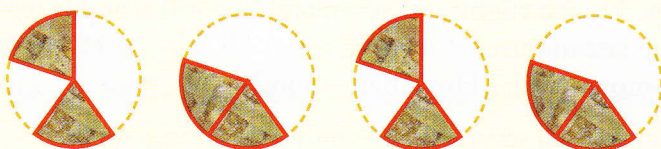
We are learning to multiply fractions by whole numbers.



Fraction equipment.

Example

Samos had a party to celebrate the braces coming off his teeth. At the end there were 4 apple pies each with 2 fifths left.



Samos said "I have got two fifths left from each pie.

That is two fifths \times 4 pies left over."

He wrote $\frac{2}{5} \times 4 = \frac{8}{5}$
 $= 1\frac{3}{5}$



He has got eight pieces left and each piece is one fifth of a pie. He has eight fifths of a pie left.



Activity 1



- 1 a Read the example above. Explain to a classmate using the diagrams in the example why what Samos wrote is true.
- b Write a similar equation for this food left over from another party.
 - i five meat pies each with 3 quarters left.
 - ii seven small pizzas each with 3 fifths left.

- 2 Write an equation for each of these. Find the answer as a mixed fraction.

a Lily had three tins of coconut milk, each with 3 quarters left. How many tins of coconut milk does she have?

b Bad weather had stopped some players from arriving at a rugby tournament. There were five teams and each had only 2 thirds of their players. How many teams could be made with the players who arrived?



Look at each of the equations you wrote for **questions 1 and 2**.

a Explain to a classmate how to find the answer using the numbers, without using a diagram.

b Write down which letter each

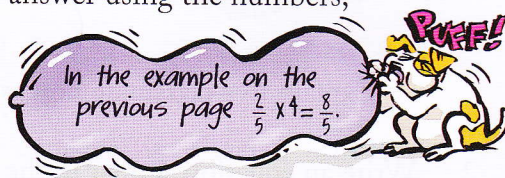
c $\boxed{?}$ stands for. $\frac{p}{q} \times n = \frac{\boxed{?} \times \boxed{?}}{\boxed{?}}$

c Find the answers to these.

Write your answers as mixed fractions.

i $\frac{2}{5} \times 3$ **ii** $\frac{3}{4} \times 7$ **iii** $\frac{4}{9} \times 7$ **iv** $\frac{3}{8} \times 8$ **v** $\frac{2}{3} \times 14$

vi $\frac{2}{5} \times 100$ **vii** $\frac{3}{7} \times 25$ **viii** $\frac{5}{12} \times 15$ **ix** $\frac{5}{6} \times 48$ **x** $\frac{5}{11} \times 96$



4 Find the answers to these. Show how you did each.

a Greenacres Garden Centre sold 54 plants on Saturday. If they sold $\frac{4}{9}$ of them in the morning, how many plants did they sell in the afternoon?

b Askra accidentally cut off $\frac{3}{7}$ of her 56 cm ribbon. She was meant to cut off only $\frac{1}{4}$. How many centimetres too much did she cut off?

We are learning to multiply whole numbers by fractions.



Fraction equipment.

Example The pages of Georgia's photo album can each hold four photos. She had six pages that only had three photos on each page.



She decided to make as many whole pages as she could with these photos.

She said "I have got $\frac{18}{4}$ pages."

She wrote $6 \times \frac{3}{4} = \frac{18}{4} = 4\frac{1}{2}$

The rearranged photos took up $4\frac{1}{2}$ pages in her photo album.



Activity 2



1 Jake had five boxes each with three packets of chips in them. Each box can hold four packets of chips when full.

a What fraction of each box was full?